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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

SHENG, TOM V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2673

DATE MAILED: 03/10/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,183

Applicant(s)

JINDA ET AL.

Examiner

Tom V Sheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 5-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Driving an image data with a value larger than the data value of the image signal in the current vertical synchronization interval would only result in further delay in reaching the data value of the current vertical synchronization interval. Please explain and provide locations in specification of the claimed subject matter.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 13-15 and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claims 13 and 17, it is unclear how a memory that stores a data value for a time period longer than one vertical synchronization period works in driving the display. Moreover there is no description at all regarding the interaction between the memory and obtaining the image data. Claims 14-15 and 18-19 are dependent on claims 13 and 17, respectively.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Usui et al. (US 5347294).

As for claim 1, Usui teaches a liquid crystal display device driving method for driving a liquid crystal display device (figure 1; R, G, B LCD sections 16, 17 or 18) by supplying image data to be written into each pixel (figure 3; gray scale data provided by display controllers 13, 14 or 15 to the signal drivers 23 and 24 of each LCD section; column 3, lines 31-57) of the liquid crystal display device to the liquid crystal display device a plurality of times in one vertical synchronization interval (each color LCD panel 20 is to be driven N times per field; see figure 6 and column 4, line 62 to column 5, line 14, where N is 4), comprising the step of:

obtaining the whole image data supplied the plurality of times (N=4 times) in one

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vertical synchronization interval (one field or conventional frame) on the basis of a data value of an image signal in a previous vertical synchronization interval (previous field) and a data value of an image signal in a current vertical synchronization interval (current field; a ROM table - figure 9, having the gray scales values of the previous frame and those of the current frame and corresponding output gray scale data of 4 times; column 5, line 32 to column 6, line 5, and column 10, line 41 to column 11, line 28). Note: Usui teaches both conventional frame that is the same as a field and another frame that is the same as a sub-field.

Claim 2 is similar to claim 1 except at least a first time out of the plurality of times of claim 2 versus the plurality of times of claim 1. The rejection of claim 1 also applies since applying N times reads on claimed at least a first time.

As for claim 3, Usui teaches when previous frame is "2" and current frame is "10", the ROM table output is "15". Afterwards when the next current frame is also a "10", the ROM table output remains a "10". See column 5, line 57 to column 6, line 5. This method reads on claimed the image data supplied at second and subsequent times has a value identical to the data value of the image signal in the current vertical synchronization interval.

As for claim 4, referring to figure 9, for example where current time data is 15 through 31 and where previous time data is 1 through 3, the image data at second and subsequent times reads on claimed intermediate specified value.

As for claim 7, Usui uses 4 frames per field that reads on claimed three times or more in one vertical synchronization interval.

As for claims 8 and 9, referring to figure 9, whenever the current time data is larger than the previous time data, the image data of second and subsequent times reads on claimed smaller value plurality of times and claimed last one piece of image data has a smaller value.

As for claims 10 and 11, since transmittance and drive data (voltage) are directly related, a larger transmittance naturally corresponds to a larger data value than the data value of the image signal in the current vertical synchronization interval.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui.

As for claims 12 and 16, Usui teaches using 4 frame memories in order to drive the LCD section 4 times per field. However, Usui does not teach a memory that stores data value of image signals in 2 or more vertical synchronization intervals (i.e. data for 2 fields or more).

On the other hand, one of ordinary skill in the art would recognize that a memory could easily be expanded to contain more than field simply to facilitate, for instance,

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simultaneous writing and reading of the memory, if a higher scanning speed is required.

Further, a larger memory does not constitute an inventive feature.

As for claims 13-15 and 17-19, Usui teaches using 4 frame memories in order to drive the LCD section 4 times per field. However, Usui does not teach a memory that stores a data value of an image signal in each vertical synchronization interval for a time period longer than one vertical synchronization interval (i.e. more than one field period long).

On the other hand, one of ordinary skill in the art would recognize that a frame memory could easily be hold for more than one field period simply to facilitate, for instance, a brighter display in a slow-motion or static display.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V Sheng whose telephone number is (703) 305-6708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Sheng
February 27, 2004


KENT CHANG
PRIMARY EXAMINER